AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, or claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A chimeric ebola envelope protein comprising a functional ebola glycoprotein binding domain fused to a heterologous amino acid sequence, wherein said chimeric protein comprises a functional deletion in an ebola envelope protein between a signal peptide and a cytoplasmic domain.

Claim 2 (Original): The chimeric ebola envelope protein according to claim 1, wherein said protein contains a wild-type ebola glycoprotein binding domain.

Claim 3 (Original): The chimeric ebola envelope protein according to claim 1, wherein said heterologous amino acid sequence is an ebola glycoprotein sequence which is non-contiguous with the binding domain in the wild-type ebola.

Claim 4 (Original): The chimeric ebola envelope protein according to claim 1, wherein said chimeric protein comprises an ebola signal peptide and an ebola binding domain having a deletion in the native ebola region between the signal peptide and the binding domain.

Claim 5 (Original): The chimeric ebola envelope protein according to claim 4, wherein said chimeric protein comprises a deletion of about 1 to 50 amino acids between the signal peptide and the binding domain.

Claim 6 - 16 (Canceled).

Claim 17 (Currently amended): The chimeric ebola envelope protein according to claim 1, selected from the group consisting of:

(a) NTDL1, amino acids 1 to 366 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(b) NTDL2, amino acids 1 to 366 fused to amino acids 502 to 676 of the ebola glycoprotein. SEQ ID NO:1;

(c) NTDL3, amino acids 1 to 370 fused to amino acids 492 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(d) NTDL4, amino acids 1 to 311 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(e) NTLD5, amino acids 1 to 287 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(f) NTDL6, amino acids 1 to 279 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(g) NTDL7, amino acids 1 to 267 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(h) NTDL8, amino acids 1 to 258 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(i) NTDL9, amino acids 1 to 232 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(j) NTDL11, amino acids 1 to 231 fused to amino acids 497 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(k) ΔN, amino acids 1 to 31 fused to 172 to 676 of the ebola glycoprotein, SEQ ID NO:1;

(l) EboΔ5S, amino acids 1 to 220 of the ebola glycoprotein, SEQ ID NO:2;

(m) EboΔ6S, amino acids 1 to 361 of the ebola glycoprotein, SEQ ID NO:2;

(n) EboΔ7S, amino acids 1 to 628 of the ebola glycoprotein, SEQ ID NO:2; and

(o) EboΔ8S, amino acids 1 to 311 fused to amino acids 497 to 664 of the ebola glycoprotein, SEQ ID NO:2;

(p) V/TC, amino acids 1 to 672 of SEQ ID NO:1 fused to amino acids 463 to 511 of SEQ ID NO:3;

(q) –2aa, amino acids 1 to 672 of SEQ ID NO:1 fused to amino acids 465 to 511 of SEQ ID NO:3;

(r) +2aa, amino acids 1 to 672 of SEQ ID NO:1 fused to amino acids 461 to 511 of SEQ ID NO:3;

(s) +16aa, amino acids 1 to 672 of SEQ ID NO:1 fused amino acids 447 to 511 of SEQ ID NO:3;

(t) +23aa, amino acids 1 to 672 of SEQ ID NO:1 fused to amino acids 440 to 511 of SEQ ID NO:3;

(u) +42aa, amino acids 1 to 672 of SEQ ID NO:1 fused to amino acids 421 to 511 of SEQ ID NO:3;

(v) V/C, amino acids 1 to 672 of SEQ ID NO:1 fused to amino acids 483 to 511 of SEQ ID NO:3;

~~(w) V/2C, amino acids 1 to 676 of SEQ ID NO:1 fused to amino acids 483 to 511 of SEQ ID NO:3;~~

(w)~~(x)~~ V/T, amino acids 1 to 650 of SEQ ID NO:1 fused to amino acids 463 to 482 of SEQ ID NO:3;

(x)~~(y)~~ ΔInt, amino acids 1 to 629 of SEQ ID NO:1 fused to amino acids sequences 463 to 511 of SEQ ID NO:3;

(y)~~(z)~~ ΔImm, amino acids 1 to 563 of SEQ ID NO:1 fused to amino acids 463 to 511 of SEQ ID NO:3;

(z)~~(aa)~~ VE, amino acids 180 to 350 of SEQ ID NO:1 in the VSV-G envelope, SEQ ID NO:3.

(aa)~~(ab)~~ H/TC, amino acids 1 to 650 of SEQ ID NO:1 fused to amino acids 661 to 856, SEQ ID NO:8;

(ab)~~(ac)~~ M/C, amino acids 1 to 650 of SEQ ID NO:1 fused to a VSV-G transmembrane domain, 465 to 482 of SEQ ID NO:3, and an MLV-GP cytoplasmic domain, amino acids 634 to 649 of SEQ ID NO:6;

(ac)~~(ad)~~ M/CR, amino acids 1 to 650 of SEQ ID NO:1 fused to a VSV-G transmembrane domain, 465 to 482 of SEQ ID NO:3, an MLV-GP cytoplasmic domain, amino acids 634 to 649 of SEQ ID NO:6, and an R peptide of MLV-GP, amino acids 650 to 665 of MLV-GP, SEQ ID NO:6;

(ad)~~(ae)~~ L/TC, amino acids 1 to 650 of SEQ ID NO:1, fused to amino acids 439 to 498 of LCMV-GP, SEQ ID NO:9.

Claims 18 - 48 (Canceled).

Claim 49 (New): The chimeric ebola envelope protein according to claim 1, wherein said chimeric comprises a deletion of the complete ebola signal peptide or a portion thereof.

Claim 50 (New): The chimeric ebola envelope protein according to claim 1, wherein said deletion of all or a portion of the carboxy terminus of the signal peptide comprises a deletion of from about 1 to 30 amino acids.

Claim 51 (New): The chimeric ebola envelope protein according to claim 1, wherein said chimeric ebola envelope comprises a deletion of all or a portion of the ebola transmembrane.

Claim 52 (New): The chimeric ebola envelope protein according to claim 51, wherein the deletion of the ebola transmembrane comprises deletion of about 1 to 23 amino acids.

Claim 53 (New): The chimeric ebola envelope protein according to claim 1, wherein said chimeric ebola envelope comprises a deletion of all or a portion of the ebola cytoplasmic domain.

Claim 54 (New): The chimeric ebola envelope protein according to claim 53, wherein the deletion of the ebola cytoplasmic domain comprises about 1 to 3 amino acids.

Claim 55 (New): The chimeric ebola envelope protein according to claim 1, wherein said chimeric ebola envelope comprises a transmembrane domain.

Claim 56 (New): The chimeric ebola envelope protein according to claim 55, wherein the transmembrane domain is from a heterologous protein.

Claim 57 (New): The chimeric ebola envelope protein according to claim 1, wherein said protein further comprises a cytoplasmic domain.

Claim 58 (New): The chimeric ebola envelope protein according to claim 1, wherein said heterologous amino acid sequence is from a non-ebola protein.

Claim 59 (New): The chimeric ebola envelope protein according to claim 58, wherein the heterologous amino acid sequence is selected from the group consisting of a Vesicular Stomatitis Virus protein; a human immunodeficiency virus transmembrane domain; a murine leukemia virus; and a Lymphocytic Choriomeningitis virus.

Claim 60 (New): A nucleic acid molecule encoding a chimeric ebola protein according to claim 1.

Claim 61 (New): The molecule according to claim 60, wherein said molecule is a plasmid.

Claim 62 (New): The molecule according to claim 60, wherein said molecule is a viral vector.

Claim 63 (New): The molecule according to claim 60, wherein said molecule is an adenoviral vector.

Claim 64 (New): A host cell comprising a protein according to claim 1.

Claim 65 (New): A host cell comprising a molecule according to claim 60.

Claim 66 (New): A method of inducing an immune response against ebola comprising the step of delivering to a subject a composition comprising a protein according to claim 1.

Claim 67 (New): The method according to claim 66, wherein said composition is delivered intramuscularly.

Claim 68 (New): The method according to claim 66, wherein said composition is delivered orally.

Claim 69 (New): A method of inducing an immune response against ebola comprising the step of delivering to a subject a composition comprising a molecule according to claim 60.

Claim 70 (New): The method according to claim 69, wherein said composition is delivered intramuscularly.

Claim 71 (New): The method according to claim 69, wherein said composition is delivered orally.

Claim 72 (New): A recombinant virus having a chimeric ebola envelope protein according to claim 1 and a minigene.

Claim 73 (New): The recombinant virus according to claim 72, wherein said minigene is a lentivirus minigene comprising Rev response element (RRE) sequences.

Claim 74 (New): The recombinant virus according to claim 72, wherein said lentivirus sequences are selected from the group consisting of a human immunodeficiency virus (HIV) vector, simian immunodeficiency virus (SIV) vector, caprine arthritis and encephalitis virus, equine infectious anemia virus, visna virus, and feline immunodeficiency virus (FIV) vector.

Claim 75 (New): The recombinant virus according to claim 74, wherein said lentivirus is an HIV.

Claim 76 (New): The recombinant virus according to claim 74, wherein said 5' LTR sequences are self-inactivating.

Claim 77 (New): The recombinant virus according to claim 76, wherein said 5' LTR sequences contain a deletion in the U3 region.

Claim 78 (New): The recombinant virus according to claim 74, wherein said 3' LTR sequences are self-inactivating.

Claim 79 (New): The recombinant virus according to claim 78, wherein said 3' LTR sequences contain a deletion in the U3 region.

Claim 80 (New): A host cell containing a recombinant virus according to claim 72.

Claim 81 (New): A method of treating a patient with a selected molecule, said method comprising the step of transducing the cells of the patient with the recombinant virus according to claim 72.

Claim 82 (New): The method according to claim 81, wherein the cells are selected from among the lung cells, dendritic cells and macrophages.

Claim 83 (New): The method according to claim 81, wherein said recombinant virus is administered directly to the patient.

Claim 84 (New): The method according to claim 82, wherein the transgene is a CFTR gene and said recombinant virus is administered intratracheally.

Claim 85 (New): The method according to claim 81, wherein the cells of the patient are transduced ex vivo, further comprising the step of re-infusing the transduced cells into the patient.

Claim 86 (New): The method according to claim 85, wherein the patient is a cancer patient.

Claim 87 (New): The method according to claim 85, wherein the transduced cells are dendritic cells.

Claim 88 (New): The method according to claim 85, wherein the transduced cells are macrophages.

Claim 89 (New): A method of delivering a molecule to the apical cells of the lung, said method comprising the step of administering a recombinant virus according to any of claims 72 intratracheally.

Claim 90 (New): An immunogenic composition comprising a DNA molecule encoding a chimeric ebola envelope protein according to claim 1 under the control of sequences which direct expression thereof in a host cell and a carrier.

Claim 91 (New): The immunogenic composition according to claim 90 comprising a recombinant virus comprising the DNA molecule.

Claim 92 (New): An immunogenic composition comprising an ebola envelope protein and a carrier, wherein said composition comprises an ebola envelope protein according to claim 1.

Claim 93 (New): The immunogenic composition according to claim 92, wherein the immunogenic composition further comprises a wild-type ebola G or S protein.